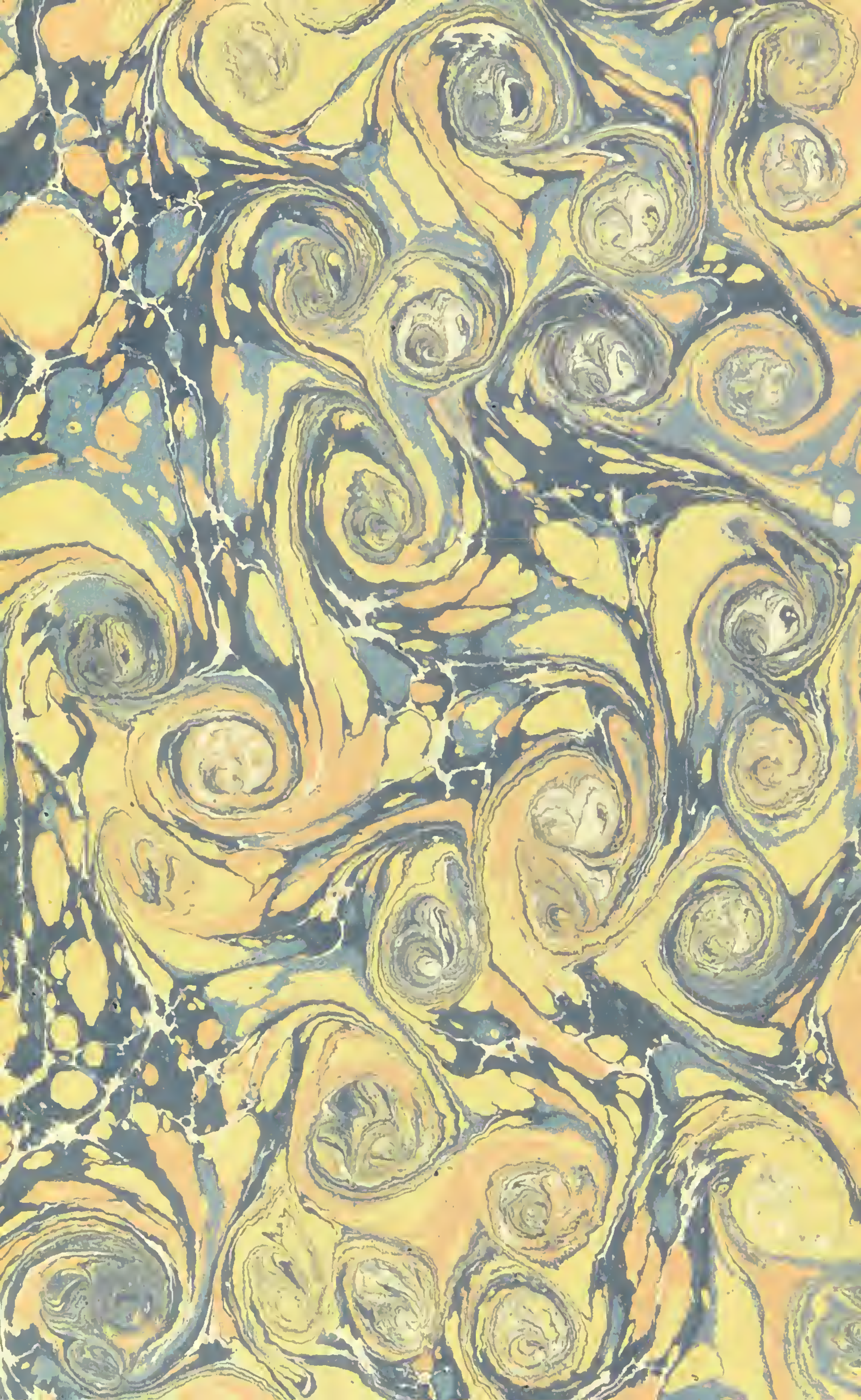

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A
PLAN
OF A COURSE OF
CHEMICAL LECTURES,

BY
ISAAC MILNER, A.M. F.R.S.
FELLOW OF QUEEN's COLLEGE,
AND
JACKSONIAN PROFESSOR
IN THE
UNIVERSITY OF CAMBRIDGE.

Non fingendum aut excogitandum, ſed inveniendum quid natura faciat aut ferat. BACON.

CAMBRIDGE,
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M.DCC.LXXXIV.

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ented by the blessed Virgin — by others calle

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2d. Fluidity.

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y and sand
Clay & ground flint

anganese takes off the colour of glass
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Sand & Clay when mix'd Vitrify
Sand or Clay, when separate, do not vi

The Rusting of metals (to be distinguish'd
erely tarnishing) is the calcination of the
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per se. an experiment which takes 2 or 3 Mont
requires air

Mercurius calcinatus per ſe.

Mercury mix'd with Sulphur makes Cinnebar

The most considerable mines — (Almadan).

The ore placed [illegible] the Furnace, the Mercury
by the heat of the fire, go ascends thro'
aludels, and is condensed in a Chamb
The workmen hold gold in their mouths t
which ~~ott~~ absorbes some of the Merc

the Mercury is seperated from Cinnaber
means of Iron — and thus is Mercury
purified. M. has no attraction for Iro
d [illegible] Sulphur has a very great one.
lishmen purify their Mercury in Iron
oth

Mercury dissolved in Nitrous acid water
Copper dipped in it —

176. Mercury boiled in water.

177. Mercury combined by distillation with oil of vitriol. mak

Turpeth mineral. When hot water is thrown on it which changes it from white to yellow.

178. Mercury combined with the nitrous acid.

The ſolution cryſtalliſed. When saturated crystalizes at the bottom of the vessel.

The cryſtals calcined to a red powder, improperly called red precipitate.

The red precipitate of the ſhops.

The ſolution of mercury in the nitrous acid diluted with water.

Mercury precipitated from it by alcalies and by copper.

179 The vitriolic acid } added to the preceding ſolution.
The marine acid }

180. Action of the marine acid on mercury.

Preparation of the corroſive ſublimate by different methods.

Its properties.

181. Preparation of mercurius dulcis: calomelas: aquila alba, &c.

Its properties.

182. Of the adulteration of corroſive ſublimate and calomel with arſenic.

183. Mercury precipitated from a ſolution of corroſive ſublimate in water,

By alcalies,

By copper,

By lime water, &c.

Brown, white, green, precipitates, and aqua phagedenica.

184. A white precipitate of mercury by adding a ſolution of common ſalt to a ſolution of mercury in the nitrous acid.

185. Mercury diſſolved,

In vegetable acids,

In fixed and volatile alcalies.

186. Method of reviving the mercury from the preceding preparations.

Calomel only differs from corrosive sublima
containing more mercury.

me think they cannot be adulterated
h arsenic.

means of alkali which attracts the acid, &
ron filings to give it Phlogiston

Mercury ground with Sal ammoniac —

ercury with any metals is called an amalga

187. Mercury united with ſulphur. in equal pa

[illegible] Æthiops mineral. either by Trituration, or

Factitious cinnabar.

Vermilion.

Adulteration of vermilion diſcovered. by distil

188. Cinnabar made without heat.

189. M. le Comte de la Garaye's tincture of mercury in ſpirits of wine.

190. Effects of mercury upon arſenic.

191. Of amalgams.

Decompoſition of amalgams.

Art of ſilvering glaſs, of gilding, &c.

OF ANTIMONY.

192. Regulus of antimony. a metallic [illegible]

Its qualities.

Fuſibility, volatility, and

Cryſtallization.

193. Flowers of regulus of antimony.

194. Calcination of regulus of antimony and

Vitrification of the calces.

195. Regulus of antimony melted with alcalies.

196. Action of the vitriolic acid
Of the nitrous acid
Of the marine acid, and of aqua regia
} on regulus of antimony.

197. A mixture of corroſive ſublimate, and of regulus of antimony ſublimed.

Butter of antimony.

Rectification of the butter.

198. Regulus of antimony and nitre mixed together in the proportion of 1 to 3, and deflagrated.

Ceruſſe of antimony.

199. Sulphur unites with regulus of antimony by fuſion.

Antimony.

Its natural hiſtory.

Method

[illegible]) not noticed, it does not
the world [illegible]

[illegible] [illegible]

[illegible] nothing is judged of by the [illegible]
[illegible]

Dr [illegible]

[illegible]

Method of ſeparating crude antimony from its ore.

200. Crude antimony roaſted, calcined to an aſh colour, and vitrified.

Yellow glaſs of antimony.

201. Preparation of regulus of antimony from crude antimony by various methods.

Mechanic uſes of regulus of antimony.

202. Crude antimony and nitre deflagrated in various proportions.

Crocus antimonii medicinalis.

Crocus antimonii mitior.

Crocus metallorum, or hepar antimonii.

Emeticum mite antimonii. 2 ℥ [illegible] 1 ℥ [illegible]

Calx antimonii, or antimonium diaphoreticum. 3 ℥ [illegible] 1 ℥ [illegible]

203. Crude antimony united with alcalies by fuſion.

Regulus medicinalis.

204. The laſt compound diſſolved in water, or

or crude antimony boiled in a ſolution of alcaline ſalts.

Precipitate from this ſolution by an acid.

Sulphur auratum antimonii.

Sulphur antimonii præcipitatum.

Spontaneous precipitate.

Kermes' mineral.

205. Action of the vitriolic acid
Of the nitrous acid
Of the marine acid, and of aqua regia
} on crude antimony.

Separation of the ſulphur.

206. A mixture of corroſive ſublimate and crude antimony ſublimed.

Butter and cinnabar of antimony.

207. Calx of antimony ſeparated from diluted butter of antimony.

Pulvis algaroth: mercurius vitæ.

208. Action of vegetable acids on antimony.

Vinum

[illegible] Pitches of [illegible]
sufficient [illegible] long [illegible] the same
length.

Vinum antimoniale.

Tartar emetic by ſeveral methods.

Vinum benedictum. [illegible]

209. Tincture of antimony in ſpirits of wine. , use Kermes,

210. The medical virtues of antimonial preparations in general.

The cauſe of the uncertain effects of particular preparations.

Of BISMUTH.

211. Natural hiſtory of biſmuth.

Separation of this ſemimetal from its ore.

Flowers of biſmuth.

Its calces.

Vitrification of the calces.

Biſmuth deflagrated with nitre.

212. Action of acids on biſmuth.

Blanc de fard.

A fixed alcali added to the waſhings of the ſpontaneous precipitate from a diluted ſolution of biſmuth in acid of nitre.

213. Biſmuth united with ſulphur.

214. Biſmuth united with metals.

Properties of the compounds.

Adulteration of quickſilver.

Uſes of biſmuth.

Of ZINC.

215. Properties of zinc.

216. Sublimation of zinc in cloſe veſſels.

217. Slow calcination of zinc.

Its inflammation in a ſtrong fire.

Flowers of zinc: lana philoſophorum: pompholiſe lix.

Reduction of the flowers.

218. Action of acids upon zinc.

Air.

Of white vitriol, and the method of purifying it from copper.

219. Zinc deflagrated with nitre.

220. Zinc will not unite with ſulphur or hepar ſulphuris.

Purification of zinc.

221. Zinc united with metals,

Pewter,

Braſs,

Pinchbeck, &c.

Solders.

222. Natural hiſtory of the ores of zinc.

Uſe of lapis calaminaris, and of black-jack, in the preparation of braſs.

Zinc procured from the ſame ores.

Uſes of zinc in medicine.

Of COBALT.

223. Ores of cobalt.

Its calx.

Uſes of the calx.

Zaffre.

Smalts.

224. Regulus of cobalt obtained from zaffre.

Its general properties.

225. Regulus of cobalt and its calces diſſolved in acids.

Phænomena attending the ſolutions.

Sympathetick ink.

226. Regulus of cobalt fuſed with ſulphur.

227. Combinations of regulus of cobalt with other metals.

Of NICKEL.

228. Ore of nickel.

Properties of the regulus.

Infuſibility of the calx.

229. Nickel diſſolves eaſily in aqua fortis, and aqua regia,

ld distinguished by turning the
tous acid green.

[illegible] mute with Silver, Zinc, Bi

mixed and granulated) by Sha

[illegible] Bit in that state is

for refining gold or Silver.

and found in Sulph [illegible]

Not eaſily in the marine acid.

Difficultly in the vitriolic acid.

Colour of the ſolutions.

230. Nickel deflagrates weakly with nitre.

231. Nickel united with ſulphur, and with metals. has a very strong attrac
for sulphur

232. Of manganeſe. is the power of a Metal
[illegible] that it dephlogist. the Nitrous
takes away the [illegible] of [illegible]

Of LEAD.

233. Natural hiſtory of lead ores.

Methods of extracting the metal.

General properties of lead.

234. Lead volatilized by heat.

Lead calcined.

Granulated. by shaking it when melted
in a [illegible]

235. Plumbum uſtum melted.

Litharge.

236. Lead converted into maſticot and minium.

Fuſibility of the calces of lead, and their action on earthy and ſtony ſubſtances, and on the containing veſſels.

237. Revivication of lead from glaſs.

238. Action of the vitriolic acid } on lead.
Of the nitrous acid

239. Methods of combining the marine acid with lead,

By trituration with ſea-ſalt, 1 Litharge

By diſtilling a mixture of granulated lead, and corroſive ſublimate of mercury,

Or a mixture of minium and ſal ammoniac.

Plumbum corneum.

240. Precipitations from the ſolutions of lead in acids.

241. Preparation of white lead, and

Of ſugar of lead.

Decompoſition of ſugar of lead.

ſtanding in the glass and giving
with the infallible principle —

242. Uſes of lead in refining the ores of gold and ſilver. by [illegible] in calcifying —

243. Action of oils upon lead, and its calces. Dissolve the calces –

The compounds decompoſed.

Changes which the oils have undergone.

244. Lead combined with ſulphur.

Artificial lead ore.

Action of fire on lead ore in cloſe veſſels.

In open veſſels.

245. Action of acids on lead ore.

Elaſtic vapour.

Artificial ſulphureous water.

246. Sugar of lead decompoſed by a ſolution of ſulphur.

Sympathetick ink.

247. Adulterations of oils and wine by lead diſcovered.

Liquor vini probatorius.

248. Lead mixed with metals.

Method of making ſhot, &c.

249. Medical and mechanic uſes of lead.

250. Of black lead.

found in [illegible] [illegible] in Europe — [illegible]

Of COPPER.

251. General properties of copper.

Granulation of it.

Calcination.

Reduction of the calces.

Heat requiſite for the fuſion of copper.

252. Action of vitriolic acid on copper.

Blue vitriol, native and artificial.

253. Copper diſſolved in acid of nitre.

In the marine acid.

254. Vegetable acid combined with copper.

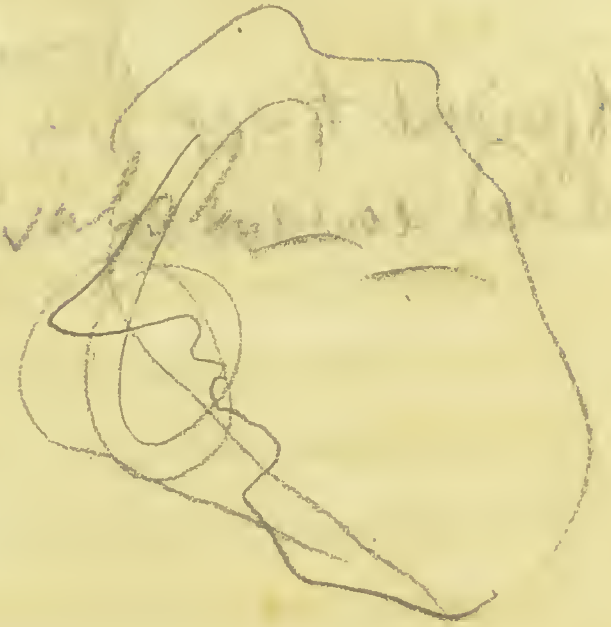
Preparation of verdigris.

Cryſtals of verdigris diſtilled.

Acetum

ical — ending folded —

aid with [illegible]



Acetum radicatum,

Uſed in the preparation of acetous æther.

255 Precipitations of copper.

Verditer blue.

Action of alcalies on copper.

Method of diſcovering minute quantities of copper in a ſtate of ſolution.

Copper precipitated by iron.

Detonation of cupreous nitre.

256. Copper combined with ſulphur,

By fuſion: artificial ore of copper,

By cementation: æs uſtum: blue vitriol.

257. Copper fuſed with arſenic, tin, zinc, &c.

With calcined calamine, and calcined black jack.

Obſervations on the ſpecific gravity of the mixtures.

Braſs changed into copper.

258. Natural hiſtory of copper.

Its ores.

Cuprum præcipitatum.

Methods of extracting and purifying the metal.

Reguli & ſcoria of the different fuſions.

Uſes of copper and of verdigris.

Of IRON.

259. General properties of iron.

Iron attracted by the magnet.

Fuſibility of iron in its crude and pure ſtate.

Specific gravity of melted iron.

Welding, inflammation, calcination of iron.

Properties of the calces.

Ruſting of iron.

260. Iron diſſolved in vitriolic acid.

Inflammable air.

Green vitriol.

261 Action of the nitrous acid
Of the marine acid } on iron.

Nitrous and inflammable air.

262. Action of the marine acid on the calces of iron.

263. Combinations of the vegetable acids with iron.

264. Precipitations of iron.

Ochres.

Natural hiſtory, and uſes of them.

Ochres combined with phlogiſton.

Stahl's alcaline tincture of iron.

Pruſſian blue.

The colouring matter of Pruſſian blue extracted by an alcali.

Ink and black dye.

Native green and blue earths.

265. Effects of nitre and ſalt ammoniac on iron.

266. Sulphur combined with iron.

Artificial pyrites.

267. Mixtures of iron, and other metals.

268. Natural hiſtory of iron.

The exiſtence of iron proved in a variety of ſubſtances.

Method of extracting iron from its ores.

Of the brittleneſs of iron.

Pig iron.

Bar iron.

Reamur's obſervations on caſt iron.

Iron converted into ſteel.

Steel converted into iron.

Steel tempered.

Caſt ſteel.

Uſes of iron in medicine.

Medical preparations of iron.

Of TIN.

269. Natural hiſtory of tin:

Preparation of the ore, and extraction of the metal.

Its general properties.

Tin fuſed, granulated, manufactured into plates.

Tinning of copper and iron veſſels.

Properties of the calces of tin,

Enamels, &c.

270. Action of the vitriolic acid }
Of the nitrous acid } on tin.

Uſes of the laſt ſolution.

271. Marine acid combined with tin.

Liquor fumans Libavii.

Butter of tin.

272. Action of vegetable acids on tin.

273. Tin combined with ſulphur.

Artificial ores of tin.

Aurum Moſaicum.

274. Properties and uſes of mixtures of tin, and other metals.

Amalgams, &c.

275. Uſes of tin in medicine.

Of the perfect METALS.

276. The diſtinguiſhing properties of gold and ſilver.

Their ductility, malleability, and

Reſiſtance to the action of fire, of nitre, and of lead.

277. Of the calcination of the perfect metals by acids.

Of SILVER.

278. Peculiar properties of ſilver.

Silver fuſed, cooled, annealed.

279. Action of large mirrours, or lenſes on ſilver.

280. Silver corroded by the vitriolic acid.

The mixture diſtilled.

Sulphureous acid.

Sulphur.

Saline reſiduum.

281. Silver diſſolved in ſpirit of nitre.

Cryſtals of ſilver.

Lunar cauſtic.

282. Action of the marine acid on ſilver.

Methods of combining this acid with ſilver.

Inſolubility of the compound in water.

Luna cornea.

283. Silver diſſolved by vegetable acids, and by alcaline ſalts.

284. Variety of methods of ſeparating ſilver from its combination with the acids.

Phænomena attending the proceſſes.

285. Sulphur united with ſilver.

Artificial ore of ſilver.

Separation of the ſulphur by different methods.

286. Properties of the combinations of ſilver with metals.

Standard ſilver of England.

287. Natural hiſtory of ſilver.

Method of extracting native ſilver from earths and ſtones by amalgamation.

Extraction of ſilver from its proper ores,

From ores of lead, copper, &c.

Purification of ſilver from the imperfect metals, and

From gold.

Of GOLD.

288. Peculiar properties of gold.

Gold fuſed, cooled, annealed.

289. Action of large burning glaſſes on gold.

290. Gold in its metallic ſtate reſiſts the action of the acids when unmixed.

Uſe of the touch-ſtone.

291. Gold diſſolves in aqua regia.

Properties of the ſolution, and

Of the precipitates by alcalies.

Aurum fulminans.

292. Aurum fulminans deprived of its fulminating quality.

293. Calces of gold diſſolved by vegetable acids, and

By alcalies.

294. Gold ſeparated from its ſolution in aqua regia by æther.

295. Gold precipitated from the ſame ſolution,

By metals,

By green vitriol,

By ſolution of tin.

Uſes of the purple magiſtery of Caſſius.

296. Effects of ſalt ammoniac, nitre, and borax, on the colour of gold.

297. Gold diſſolved by hepar ſulphuris, and

Precipitated by iron.

Uſes of ſulphur in ſeparating gold from ſilver, copper, &c.

298. Gold amalgamated with mercury.

Great attraction of mercury for gold.

299. Combinations of gold with tin, copper, &c.

300. Gold refined by

Cementation,

Antimony,

Cupellation,

Quartation.

301. Natural hiſtory of gold.

Native gold.

Method of ſeparating gold from ſands, earths, &c.

Of PLATINA.

302. Natural hiſtory of Platina.

Its purification, and general properties.

303. Action of fire, of nitre, and of lead, on platina.

304. Platina diſſolved in aqua regia.

Precipitates of platina.

Separation of gold from platina by various methods.

305. Platina diſſolved in liver of ſulphur.

306. Platina fuſed with metals.

Of WATERS.

307. Different ſpecies and qualities of waters.

Diſtilled
Rain
Spring } waters.
Snow
Mineral

308. Of mineral waters impregnated with

Air,

Acids,

Alcalies,

Neutral ſalts,

Bituminous } ſubſtances.
Metallic }

Methods of analyſing mineral waters.

OF BITUMENS.

309. Natural hiſtory of bituminous ſubſtances.

Naptha.

Petroleum.

Barbadoes tar.

Jews pitch.

310. Method of analyſing the bitumens,

By fire,

By menſtrua,

311. Arti-

311. Artificial compounds reſembling bitumens.

312. Of jet and foſſil coal.

Their origin, properties, and analyſis

In cloſe } veſſels.
In open }

Of the ſoot of pit-coal.

313. Opinions concerning the origin of amber and ambergris.

314. Amber diſtilled.

Phlegm.

Acid ſpirit.

Volatile acid ſalt.

Oil and caput mortuum.

315. Rectification of the oil of the laſt proceſs.

Purification of the ſalt.

Uſes of the caput mortuum.

316. Amber examined by menſtrua.

Precipitation from the ſolution.

Different ſorts of varniſhes made with amber.

Of VEGETABLES.

317. The nutriment of vegetables,

From the ſoil,

Water,

Air.

Purification of the air by vegetables.

318. Of the exiſtence of nitre, &c. in vegetables.

319. The influence of light on growing vegetables.

320. The principles into which vegetable ſubſtances are reſolvable by fire.

Analyſis of plants in cloſe veſſels.

Diſtillation of oak.

Of muſtard ſeed.

Obſervations on the air, acid, oils, and volatile alcali, obtained from vegetables.

321. The nature of tar and pitch.

Of lamp black.

Acid of tar.

Eſſential oil of tar,

Its rectification.

Tar water.

322. Charcoal,

Different ſorts and uſes of it.

Decompoſition of charcoal.

323. Analyſis of vegetables in the open air.

Diſtillation of wood ſoot.

Uſes of the aſhes of vegetables.

Of the native Principles of Vegetables.

GUMS.

324. General properties of Gums.

Gums analized by fire.

Gums diſſolved in water, and precipitated by ſpirits of wine.

Gums combined with oils, balſams, and reſins.

Emulſions.

Native combinations of gums and reſins.

Gum ammoniac.

Aſſafœtida.

Myrrh.

Solutions of gummy reſins in ſpirits and in water.

325. Methods of procuring gums from vegetable ſubſtances.

Eſſential OILS, BALSAMS, *and* RESINS.

326. The diſtinguiſhing qualities of eſſential oils.

The changes they ſuffer by expoſure to the air.

Their volatility.

Decompoſition of eſſential oils in cloſe and in open veſſels.

327. Combinations of eſſential oils with water

water and with alcalies fixed and volatile.

Starkey's ſoap.

Eau de luce.

328. Eſſential oils diſſolved in ſpirits of wine.

329. The qualities of balſams and reſins compared with thoſe of eſſential oils.

330. Diſtillation of turpentine.

Eſſential oil.

Roſin: its colour.

331. Analyſis of balſam of capivi.

Reſins diſſolved in ſpirits of wine, and in eſſential oils.

Varniſhes.

332. Benzoine ſublimed.

Flowers of Benzoine.

Their properties.

Diſtillation of the reſiduum.

Eſſential ſalt of benzoine obtained by ſolution and cryſtallization.

Benzoine diſſolved in ſpirits of wine and precipitated by water.

Virgins milk.

333. The parts of vegetable ſubſtances which contain the eſſential oils.

334. Different methods of extracting the eſſential oils, balſams, and reſins.

CAMPHOR.

335. Rough camphor refined,

By ſublimation,

By ſolution in ſpirits of wine.

336. Qualities of camphor in which it reſembles eſſential oils.

Qualities in which it differs from them.

337. Camphor diſſolved in acids, and in ſpirits of wine.

Precipitated by the addition of water.

Camphorated ſpirits of wine inflamed.

338. Method of obtaining camphor from vegetables.

EXPRESSED OILS.

339. Their diſtinguiſhing qualities.

Their rancidity.

340. Expreſſed oils impregnated with the odorous principle of vegetables.

341. Action of acids on expreſſed oils.

Properties of the compounds.

Methods of refining oils.

342. Alcalies combined with expreſſed oils.

Soaps of different ſorts.

Soaps diſſolved in water and in ſpirits of wine.

Decompoſition of ſoap.

Changes which the oil has undergone.

Curdling of ſoap in hard waters explained.

The nature of expreſſed oils changed by repeated diſtillation, with or without the addition of quicklime.

343. The parts of vegetables in which theſe oils chiefly reſide.

Method of obtaining them by mechanical preſſure, with or without heat.

SALTS.

344. The nature of the ſaline ſubſtances contained in the juices of plants.

345. Of the exiſtence of the fixed alcali in vegetables.

346. Method of extracting the eſſential ſalts from the juices of vegetables.

SUGAR.

347. Its diſtinguiſhing qualities.

Analyſis of ſugar by fire.

348. Of the acid of ſugar.

349. Sugar diſſolved — in water — in ſpirits, and

Cryſtallized.

350. Hiſtory of ſugar,

Its

Its preparation and purification.

Melaſſes.

Of the ſaccharine juices obtainable from maple trees, birch trees, &c.

Uſes of ſugar in pharmacy, &c.

FARINA.

351. Examined by fire, and

By menſtrua.

352. General obſervations on the vegetable preparations, by expreſſion and inſpiſſation, by infuſion, maceration, digeſtion, and decoction in water, by ſolution in wine, ſpirits, &c. by evaporation of the diſſolving menſtrua, and by diſtillation.

Of aloes, opium, inſpiſſated juice of hemlock, &c.

Infuſion and decoction of Peruvian bark, &c.

Tinctures and extracts of jalap, &c. medical wines.

Mint, thyme, &c. diſtilled with water.

Roſemary, lavender, &c. diſtilled with ſpirits.

Of DYING.

353. Its theory: good dyes: falſe dyes.

354. Of the dying of wool, ſilk, cotton, &c.

Of the different ſorts of colouring ſubſtances.

355. Aqueous and ſpirituous decoction of ſeveral ſorts of wood.

356. Colouring matter of ſome vegetables precipitated by alum, ſolution of tin, &c.

Lakes.

Of FERMENTATION and PUTREFACTION.

The vinous Fermentation.

357. The vegetable ſubſtances which are ſubject to this ſort of fermentation.

Preparation of ſome of them.

Malting.

358. The neceſſity of heat, and moiſture to the fermentation.

Phænomena of the proceſs.

Fixed air.

Heat.

359. End of the vinous fermentation.

The nature of wine-lees.

Properties of the fermented liquor.

Diſtillation of it.

Ardent ſpirit.

Reſiduum.

Different ſorts of ardent ſpirits: their properties and flavours.

Rectification of ſpirits.

Identity of alcohol.

Its attraction for water.

Of proof ſpirit: Methods of eſtimating the ſtrength of brandy, rum, &c.

Mixture of alcohol with alcalies.

Of the conſtituent parts of alcohol.

360. Of the inſenſible fermentation of vinous liquors, and

The depoſition of tartar.

Red and white tartar: its purification.

Cream of tartar: cryſtals of tartar.

General properties of tartar.

Diſtillation of it.

Acid.

Air.

Oil.

Volatile alcali.

Caput mortuum.

Fixed alcali obtained from the caput mortuum.

Of the exiſtence of an alcaline ſalt in tartar.

361. Cryſtals of tartar combined with alcalies, and abſorbent earths.

The effects of heat, and of acids on the neutral compounds.

The acetous Fermentation.

362. Circumſtances in which this fermentation differs from the former.

Its product.

Vinegar.

Obſervations on its ſtrength.

363. Concentration of vinegar,

By diſtillation, or by freezing,

By uniting it to ſubſtances for which it has a ſtrong attraction.

Analyſis of the extract of vinegar.

364. Method of diſcovering whether vinegar

gar be depraved with lead, copper, oil of vitriol, &c.

365. The effects of heat on vinegar.

Inflammability of its vapour.

366. Vinegar combined with fixed alcalies.

The neutral ſalts decompoſed,

By fire,

By oil of vitriol.

367. Vinegar combined with volatile alcali.

Spiritus mindereri.

Method of obtaining it in a ſolid form.

Its uſes in medicine.

PUTREFACTION.

368. The putrid fermentation of vegetables.

General obſervations on the three ſtages of fermentation, the circumſtances which favour each of them, and their connection with each other.

369. Analyſis of putrified vegetables.

Fetid phlegm.

Volatile alcali.

Oil.

Reſiduum.

370. The nature of ferments.

The activity of aromatic ſubſtances increaſed by fermentation.

Methods of reſtraining fermentation, and of preſerving vegetables.

Of ANIMAL SUBSTANCES.

371. Production of animal ſubſtances.

The principles into which they are reſolved by Chemiſtry.

372. Compariſon of the properties of vegetable and of animal ſubſtances.

373. Putrefaction of animal matters.

Methods of promoting or of preventing it.

374. Analyſis of the ſolid parts of animals.

Bones, horns, &c. diſtilled.

Phlegm.

Volatile alcali.

Empyreumatic oil.

Caput mortuum.

375. Rectification of the empyreumatic oil.

Properties of the oleum animale Dippelii.

376. Action of hot water on the ſolid parts of animals.

Glue, iſinglaſs, ſize, &c.

Separation of phoſphoric acid from bones and horns, by Scheele's method.

377. Compariſon of the fluid and ſolid parts of animals.

378. Analyſis of blood by diſtillation.

379. Spontaneous reſolution of the blood into ſerum and craſſamentum.

[illegible] of Inflam[illegible]

Mr. Thomas [illegible]

Phosphoric acid, [illegible]

[illegible]

[illegible]

Filina pl

[illegible]

2nd [illegible]

Morphine [illegible]

The ſerum coagulated by heat, by acids, and by ſpirits of wine.

The craſſamentum reſolved into coagulable lymph and red globules.

Of the colour of the blood, and the

Changes it undergoes by putrefaction.

380. The neceſſity of excrementitious fluids in animal bodies.

381. Perſpiration.

382. Urine.

Its analyſis by fire.

Freſh urine diſtilled with lime.

Variety of ſaline matters contained in urine.

The fuſible ſalt of urine.

Phoſphorus made by ſeveral methods.

Its rectification, and

General properties.

Action of heat and of menſtrua on phoſphorus.

GEOFFROY's TABLE

1	2	3	4	5	6	7	8
Acids in General	Acid of Sea Salt	Acid of Nitre	Acid of Vitriol	Abſorbent Earths	Fixed Alcaline Salts	Volatile Alcaline Salts	Metalline Subſtances
Fixed Alcaline Salts	Tin	Iron	Phlogiſton	Acid of Vitriol	Acid of Vitriol	Acid of Vitriol	Acid of Sea Salt
Volatile Alcaline Salts	Regulus of Antimony	Copper	Fixed Alcaline Salts	Acid of Nitre	Acid of Nitre	Acid of Nitre	Acid of Vitriol
Abſorbent Earths	Copper	Lead	Volatile Alcaline Salts	Acid of Sea Salt	Acid of Sea Salt	Acid of Sea Salt	Acid of Nitre
Metalline Subſtances	Silver	Mercury	Abſorbent Earths		Diſtilled Vinegar		Diſtilled Vinegar
	Mercury	Silver	Iron		Sulphur		
			Copper				
			Silver				
	Gold						

# of AFFINITIES.

9	10	11	12	13	14	15	16
Sulphur	Mercury	Lead	Copper	Silver	Iron	Regulus of Antimony	Water
Fixed Alcaline Salts	Gold	Silver	Mercury	Lead	Regulus of Antimony	Iron	Spirits of Wine
Iron	Silver	Copper	Calamine	Copper	Silver, Copper, Lead	Silver, Copper, Lead	Neutral Salts
Copper	Lead						
Lead	Copper						
Silver	Zinc						
Regulus of ntimony	Regulus of Antimony						
Mercury							
Gold